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WHITE STREET LANDFILL

Greensboro, North Carolina
Phase I Post Closure Monitoring
April 2006 Sampling
S&ME Project No. 1584-98-081

Prepared For:

The City of Greensboro



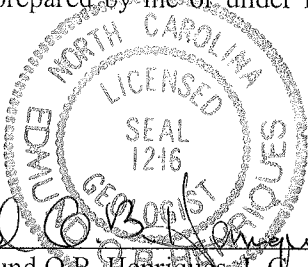
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August 2006




I hereby certify this 23rd day of August, 2006, that this report was prepared by me or under my direct supervision.




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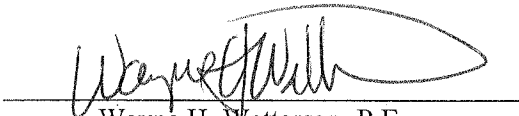

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1.0 EXECUTIVE SUMMARY

Five monitoring wells and five stream locations at the White Street Landfill were sampled during May 2005. Five wells (I-1, I-2, I-3, I-4, and MW-13) comprise the groundwater monitoring system for the closed Phase I portion of the White Street Landfill. Monitoring well MW-13 serves as a background well for both the Phase I and the Phase II areas. The sampling was conducted according to North Carolina Solid Waste Management Guidelines. Samples were analyzed by a North Carolina certified laboratory. The samples collected from wells I-1, I-2, I-3, and I-4 were submitted for analysis using the federal Appendix I organic constituents and eight RCRA Metals for detection monitoring. The sample collected from well MW-13 and samples from surface water locations SW-1, SW-2, SW-3, SW-4 and SW-5 were analyzed for federal Appendix I detection monitoring constituents. Phase I shares the five surface water monitoring locations with Phase II and Phase III.

1.1 Analytical Results:

1.1.1 Metals

Results from the five Phase I monitoring wells indicate barium, cadmium, and chromium were all detected at quantified concentrations during the April 2006 groundwater monitoring event.

Barium, with reported at concentrations of 575 µg/L and 744 µg/L in groundwater monitoring wells I-2 and I-4 respectively, was quantified during this sampling event, but remained below the 2000 µg/L North Carolina 2L Standard for barium .

Groundwater monitoring well MW-13 showed a reported concentration of 4.3 µg/L of cadmium during the April 2006 sampling event. In September of 2005 the North Carolina Department of Environment and Natural Resources (DENR) revised the 2L standard for cadmium from 5 µg/L to 1.75 µg/L. As a result, the reported concentration of cadmium in MW-13 exceeds the revised 2L standard for this constituent during this sampling event. However, monitoring well MW-13 is a background well and is not being influenced by the Facility. Therefore, the reported concentration of 4.3 µg/L should be considered reflective of naturally occurring levels of cadmium within the hydrogeologic regime at the time of this sampling event.

Chromium was reported at quantified concentrations of 25.7 mg/L and 13.2 mg/L in Groundwater Monitoring Wells I-2 and I-4 respectively. However, both of these values are below the NCAC 2L Standard for chromium.

Zinc was detected in the surface water sample collected from location SW-3 during this sampling event. The reported concentration of 51.6 µg/L exceeds the NCAC 2B Standard established for zinc. It is important to note that sampling location SW-3 is located downstream of the North Buffalo Wastewater Treatment Plant outfall and upstream of the landfill. Therefore, the reported zinc concentration from this sampling location is not likely due to a release from the landfill Facility, but rather zinc from another upstream source.

No other RCRA metals were detected in the Phase I monitor wells or surface water samples on the date the samples were collected.

1.1.2 Volatile Organic Compounds

The volatile organic constituent chlorobenzene was detected at wells I-3 and I-4 at reported concentrations of 9.6 µg/L and 9.8 µg/L respectively. Neither of these concentrations exceed the 2L groundwater quality standard for chlorobenzene set at 50 µg/L.

Additionally, 1,4-dichlorobenzene was detected in the groundwater sample collected from well I-4 at a reported concentration at the laboratory Quantitation Limit. Though quantified, the reported concentration of 5 µg/L does not exceed the corresponding 2L groundwater quality standard of 75 µg/L for 1, 4-dichlorobenzene.

No other volatile organic compounds were detected in any of the Phase I monitoring wells or the surface water samples on the dates the samples were collected.

2.0 INTRODUCTION

White Street Landfill is a Solid Waste Management Facility (SWMF) located at the north end of White Street in northeastern Greensboro. S&ME, Inc. (S&ME) performs routine groundwater monitoring, statistical analysis and reporting for the City of Greensboro's White Street Landfill

Facility. Phase I of the landfill is covered by Solid Waste Permit #41-03. **Figure 1** is a map showing the monitoring well locations. One upgradient and four down-gradient monitoring wells located along the perimeter of the closed Phase I disposal area were sampled. Five surface water samples were collected from North Buffalo Creek and one of its tributaries in the vicinity of the White Street facility. Phase I shares the surface water sampling locations with adjacent Phase II and Phase III.

The samples collected from Phase I wells I-1, I-2, I-3, and I-4 were analyzed for Appendix I volatile organic constituents and the eight RCRA metals. The sample collected from well MW-13 was analyzed for Appendix I volatile organic constituents and Appendix I inorganic constituents. This report discusses the field procedures, summarizes the field measurements and analytical results for the April 2006 water quality monitoring event.

3.0 SCOPE OF WORK

S&ME completed the following scope of services to complete the First Semi-Annual Groundwater Monitoring Event of the 2006 Groundwater Monitoring Year at the White Street Landfill, Phase I:

- S&ME sampled five monitoring wells and five surface water locations at the White Street landfill SWMF.
- S&ME obtained field values for pH, temperature, dissolved oxygen (DO), turbidity, oxidation-reduction potential (ORP), and conductivity at each sample location.
- Depth to water measurements were collected during well purging to monitor drawdown.
- The collected samples from I-1, I-2, I-3, and I-4 were analyzed for Appendix I organic constituents and 8-RCRA metals by a North Carolina certified laboratory, using State approved methods.
- The surface water samples collected from Surface Water Monitoring points: SW-1, SW-2, SW-3, SW-4, and SW-5 were analyzed for Appendix I constituents by a North Carolina certified laboratory, using State approved methods.

- The groundwater sample collected from background monitoring well MW-13 was analyzed for Appendix I constituents by a North Carolina certified laboratory, using State approved methods (e.g. MW-13 is also part of Phase II, which has different analytical requirements).
- S&ME calculated groundwater flow directions at the Phase I area monitoring well locations which were based on static water elevations.
- S&ME prepared this First Semi-Annual 2006 Groundwater Monitoring Report for submittal to City of Greensboro and DENR.

4.0 METHODS EMPLOYED

4.1 Monitoring Well Sampling

Phase I groundwater monitoring well sampling took place on April 24, 2006. The monitoring well locations are shown on **Figure 1**. A representative from S&ME opened each well and measured the static water level from the top edge of the PVC casing in wells. The total well depth sounding data reported for the sampling events completed during September 1997 and May 1998, were used to determine the volume of water in wells I-1, I-2, I-3, I-4, and MW-13; where dedicated MicroPurge™ pumps had been previously installed. These data are summarized in **Table 1**.

In accordance with the facility's approved Water Quality Monitoring Plan, each well was purged using the dedicated MicroPurge™ pumps. At each well, the purge rate and the drawdown of the water table were monitored as an indicator of how much stress the purging placed on the aquifer. The purge rates were calculated by recording the time required to fill a graduated cylinder. The purging flow rate was approximately 100 milliliters/minute (ml/min.). During purging, the depth to water was periodically monitored and recorded on the groundwater sampling field data sheets. The field data sheets are included in **Appendix A**. For the Phase I sampling event, the measured drawdown in the sampled wells ranged from 0.01 feet to 0.92 feet.

It is our opinion that the observed drawdowns were generally minor during purging; therefore, the stresses placed on the aquifer should have been minor. The observed drawdown data also suggests that the purging rates should have been low enough such that recharge water should not have been overly agitated, reducing the potential for colloids to be drawn into the well bore.

The purge water from each of these wells was monitored for pH, temperature, DO, turbidity, ORP, and conductivity. A sample was collected when the changes in those readings fluctuated no more than 10 percent. The field data collected during sampling was recorded on the groundwater sampling field data sheets. **Table 2** summarizes the results of the field data.

Groundwater samples were collected from dedicated Teflon tubing at each of the pumped wells. Immediately upon collection, each sample was placed in laboratory supplied containers, packed on ice, and placed under chain-of custody. The sampling technician wore latex gloves that were changed between wells to reduce the possibility of cross contamination. After collection, the groundwater samples were packed on ice and placed under chain-of custody.

All Phase I monitoring well samples (I-1, I-2, I-3, and I-4) were analyzed for Appendix I volatile organic constituents and the eight RCRA metals. Monitor well MW-13 was analyzed for Appendix I constituents since it is shared with Phase II as a background groundwater quality monitoring well for both Phase I and Phase II. Analyses were conducted by Environmental Conservation Laboratories; a North Carolina certified laboratory.

4.2 Stream Sampling

Surface water sampling took place on April 25 and 26, 2006. Four stream samples (SW-1, SW-3, SW-4, and SW-5) were collected from North Buffalo Creek, which flows along the northwestern side of the White Street Landfill. Surface water sample (SW-2) was collected from a tributary of North Buffalo Creek. The locations are shown in **Figure 2**. SW-1 was collected upstream from the landfill near the US Highway 29 bridge. SW-2 was collected from a southern tributary of North Buffalo Creek just before it joins the main creek west of the landfill entrance. SW-3 was collected downstream of the North Buffalo Wastewater Treatment Plant outfall and upstream of the landfill. SW-4 was collected downstream of the landfill at a USGS gauging station located on North Buffalo Creek about three-quarters of a mile north of the landfill. SW-5 was collected from North Buffalo Creek immediately downstream of the Phase I and II landfill disposal areas. The surface water samples were collected by immersing laboratory supplied containers in the water to be sampled. After collection, the surface water samples were packed on ice and placed under chain-of-custody. All stream samples were analyzed for Appendix I inorganic and volatile organic constituents by Environmental Conservation Laboratories; a North Carolina certified laboratory.

5.0 RESULTS

5.1 Groundwater Analytical Results

The results of the laboratory analyses for the closed Phase I area groundwater monitoring well samples are summarized in **Tables 3 & 4** and the complete laboratory reports are included in **Appendix B** of this Report. Groundwater Monitoring Wells I-1, I-2, I-3, I-4, and MW-13 monitor the closed Phase I area. The following summarizes the groundwater sample analyses.

5.1.1 Metals

Results from the five Phase I monitoring wells indicate barium, cadmium, and chromium were all detected at quantified concentrations during the April 2006 groundwater monitoring event.

Barium, with reported at concentrations of 575 µg/L and 744 µg/L in groundwater monitoring wells I-2 and I-4 respectively, was quantified during this sampling event, but remained below the 2000 µg/L North Carolina 2L Standard for barium .

Groundwater monitoring well MW-13 showed a reported concentration of 4.3 µg/L of cadmium during the April 2006 sampling event. In September of 2005 the North Carolina Department of the Environment and Natural Resources (DENR) revised the 2L standard for cadmium from 5 µg/L to 1.75 µg/L. As a result, the reported concentration of cadmium in MW-13 exceeds the revised 2L standard for this constituent during this sampling event. However, monitoring well MW-13 is a background well and is not being influenced by the Facility. Therefore, the reported concentration of 4.3 µg/L should be considered reflective of naturally occurring levels of cadmium within the Hydrogeologic regime at the time of this sampling event.

Chromium was reported at quantified concentrations of 25.7 mg/L and 13.2 mg/L in Groundwater Monitoring Wells I-2 and I-4 respectively. However, both of these values are below the NCAC 2L standard for chromium.

5.1.2 Volatile Organic Compounds

The volatile organic constituent chlorobenzene was detected at wells I-3 and I-4 at reported concentrations of 9.6 µg/L and 9.8 µg/L respectively. Neither of these concentrations exceed the 2L groundwater quality standard for chlorobenzene set at 50 µg/L.

Additionally, 1,4-dichlorobenzene was detected in the groundwater sample collected from well I-4 at a reported concentration at the laboratory Quantitation Limit. Though quantified, the reported concentration of 5 µg/L does not exceed the corresponding 2L groundwater quality standard of 75 µg/L for 1,4-dichlorobenzene.

No other volatile organic compounds were detected in any of the Phase I monitoring well samples on the dates the samples were collected.

5.2 Groundwater Flow Direction

The static water levels in the Phase I monitoring wells were measured on April 24, and 25, 2006. The depth to the water table ranged from 2.49 to 21.05 feet below the top of well casing on this date. Groundwater and well casing elevation data are presented in Table 1. A groundwater contour map constructed using the data collected on April 24 and 25 is presented as Figure 1. The groundwater gradient at each well was calculated assuming a constant groundwater gradient along the flow line between adjacent groundwater elevation contours or between the well and the nearest contour. The groundwater elevation data collected during this monitoring event indicates that the groundwater beneath Phase I generally flows toward the west and northwest, toward Buffalo Creek. This is, in general, consistent with the results from previous monitoring events.

5.3 Surface Water

The results of the laboratory analyses for Appendix I constituents in the surface water samples are summarized in Tables 5 & 6.

Zinc was detected in the surface water sample collected from location SW-3 during this sampling event. The reported concentration of 51.6 µg/L exceeds the NCAC 2B Standard established for zinc. It is very important to note that sampling location SW-3 is located downstream of the North Buffalo Wastewater Treatment Plant outfall and upstream of the landfill. Therefore, the reported zinc concentration from this sampling location is not likely due to a release from the landfill Facility, but rather zinc from another upstream source. No other RCRA metals were detected in the surface water samples on the date the samples were collected.

No Appendix I volatile organic compounds were detected at any of the surface water sample locations on the dates sampled. The complete laboratory reports are included in Appendix B.

5.4 Quality Assurance

All of the monitoring wells in Phase I were sampled using dedicated micro-purge pumps.

Therefore, no equipment rinse samples were collected for analysis for data quality control. Trip blank samples accompanied the sample bottles from the time they left the laboratory until they returned. The trip blank samples were analyzed for Appendix I volatile organic constituents. No volatile organic constituents were present in the trip blank samples at detectable levels.

Laboratory QC samples were analyzed for all constituents included in this sampling event. The results of the trip blank, and laboratory QC sample analyses are included in Appendix B of this Report.

6.0 REFERENCES

Fetter, C. W., 1988, Applied Hydrogeology, New York; Macmillian Publishing Company, 1988, 592 pp.

North Carolina Administrative Code, Title 15A, Department of Environment, Health and Natural Resources, Division of Environmental Management, Subchapter 2L, Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina, Sections .0100, .0200, and .0300 (November 8, 1993); from the Environmental Management Commission Raleigh, North Carolina.

North Carolina Administrative Code, Title 15A, Department of Environment, Health and Natural Resources, Division of Environmental Management, Subchapter 2B, Classifications and Water Quality Standards Applicable to the Surface Waters of North Carolina, Section .0200 (April 1, 1991); from the Environmental Management Commission, Raleigh, North Carolina.

North Carolina Administrative Code, Title 15A, Department of Environment, Health and Natural Resources, Division of Solid Waste Management, subchapter 13B, Solid Waste Management, Section .1600 (January 1, 1997).

TABLES

TABLE 1
GROUNDWATER ELEVATION DATA SUMMARY (4/06)
PHASE I - WHITE STREET LANDFILL
GREENSBORO, NORTH CAROLINA
S&ME PROJECT NO. 1584-98-081

Well No.	Elevation TOC (feet)	Depth of Well (feet)	Static Water Levels			
			October 11, 2005		April 24, 2006	
			DTGW (feet)	Elevation (feet)	DTGW (feet)	Elevation (feet)
I-1	776.11	23.36	10.54	765.57	8.94	767.17
I-2	768.58	23.13	5.05	763.53	4.66	763.92
I-3	764.65	24.22	13.99	750.66	13.03	751.62
I-4	759.83	14.57	5.50	754.33	2.49	757.34
MW-13	741.30	33.78	21.58	719.72	21.05	720.25

TOC = Top of Casing. Elevations determined by survey: HDR Engineering, Inc.

Depth of well data as reported by BPA Environmental & Engineering, Inc.

DTGW = Depth to Groundwater

Elevation = calculated groundwater elevation

TABLE 2
GROUNDWATER & SURFACE WATER FIELD DATA SUMMARY (4/06)
PHASE I - WHITE STREET LANDFILL
GREENSBORO, NORTH CAROLINA
S&ME PROJECT NO. 1584-98-081

Location: I-1

Time	Date	Temp-C	Temp-F	pH	SpC-mS/cm	ORP-mV	DO-mg/L	Turbidity-NTU	Depth to Water-feet
0954	24-Apr-06	16.43	61.574	5.73	1.970	46	2.48	5.75	8.94
0959	24-Apr-06	16.05	60.890	5.71	1.990	47	1.91	5.75	
1004	24-Apr-06	16.07	60.926	5.7	1.990	43	1.45	7.12	
1009	24-Apr-06	16.34	61.412	5.67	2.010	52	1.14	7.63	
1014	24-Apr-06	15.82	60.476	5.66	2.05	55	0.81	7.88	
1019	24-Apr-06	15.68	60.224	5.66	2.07	56	0.7	7.80	
1024	24-Apr-06	15.69	60.242	5.65	2.08	58	0.6	7.18	

Location: I-2

Time	Date	Temp-C	Temp-F	pH	SpC-mS/cm	ORP-mV	DO-mg/L	Turbidity-NTU	Depth to Water-feet
1051	24-Apr-06	18.53	65.354	6.17	2.53	-90	0.87	78	4.66
1056	24-Apr-06	17.67	63.806	6.18	2.55	-114	0.38	94	
1101	24-Apr-06	17.69	63.842	6.18	2.55	-120	0.27	231	
1106	24-Apr-06	17.88	64.184	6.19	2.55	-128	0.26	272	
1111	24-Apr-06	17.88	64.184	6.2	2.54	-129	0.23	276	
1116	24-Apr-06	17.92	64.256	6.21	2.54	-129	0.23	250	

Location: I-3

Time	Date	Temp-C	Temp-F	pH	SpC-mS/cm	ORP-mV	DO-mg/L	Turbidity-NTU	Depth to Water-feet
1142	24-Apr-06	16.72	62.096	6.49	3.12	-95	1.26	36.3	13.03
1147	24-Apr-06	16.92	62.456	6.44	3.06	-95	0.8	21.6	
1152	24-Apr-06	16.9	62.42	6.43	3.03	-92	0.68	21.6	
1157	24-Apr-06	17.1	62.78	6.41	3.03	-92	0.54	36.40	
1202	24-Apr-06	17.24	63.032	6.4	3.03	-91	0.49	35.40	
1207	24-Apr-06	17.35	63.23	6.4	3.01	-89	0.4	39.00	

Location: I-4

Time	Date	Temp-C	Temp-F	pH	SpC-mS/cm	ORP-mV	DO-mg/L	Turbidity-NTU	Depth to Water-feet
1230	24-Apr-06	16.07	60.926	6.82	2.59	-60	3.24	200	2.49
1235	24-Apr-06	15.87	60.566	6.85	2.69	-66	1.63	245	
1240	24-Apr-06	15.94	60.692	6.86	2.87	-77	1.01	413	
1245	24-Apr-06	16.17	61.106	6.86	2.94	-89	0.51	461.0	
1250	24-Apr-06	15.97	60.746	6.87	2.97	-96	0.33	418.0	
1255	24-Apr-06	15.69	60.242	6.88	2.99	-103	0.24	428	
1300	24-Apr-06	15.53	59.954	6.89	3.01	-107	0.18	398	

Location: MW-13

Time	Date	Temp-C	Temp-F	pH	SpC-mS/cm	ORP-mV	DO-mg/L	Turbidity-NTU	Depth to Water-feet
1600	25-Apr-06	18.16	64.688	6.78	0.603	116	2.73	2.9	21.05
1605	25-Apr-06	18.68	65.624	6.65	0.568	123	2.86	2.06	
1610	25-Apr-06	18.69	65.642	6.61	0.557	128	3.13	1.7	
1615	25-Apr-06	18.56	65.408	6.59	0.548	132	3.38	1.64	
1620	25-Apr-06	19.29	66.722	6.55	0.541	135	3.51	1.83	
1625	25-Apr-06	19.02	66.236	6.54	0.537	137	3.61	1.92	

Location: SW-1

Time	Date	Temp-C	Temp-F	pH	SpC-mS/cm	ORP-mV	DO-mg/L	Turbidity-NTU	Depth to Water-feet
0835	4/26/2006	18.3	64.94	7.11	0.195				

Location: SW-2

Time	Date	Temp-C	Temp-F	pH	SpC-mS/cm	ORP-mV	DO-mg/L	Turbidity-NTU	Depth to Water-feet
0730	4/26/2006	16.26	61.268	6.99	0.182				

Location: SW-3

Time	Date	Temp-C	Temp-F	pH	SpC-mS/cm	ORP-mV	DO-mg/L	Turbidity-NTU	Depth to Water-feet
0815	4/26/2006	18.47	65.246	6.86	0.335				

Location: SW-4

Time	Date	Temp-C	Temp-F	pH	SpC-mS/cm	ORP-mV	DO-mg/L	Turbidity-NTU	Depth to Water-feet
0915	4/26/2006	19.05	66.29	7.2	0.286				

Location: SW-5

Time	Date	Temp-C	Temp-F	pH	SpC-mS/cm	ORP-mV	DO-mg/L	Turbidity-NTU	Depth to Water-feet
1705	4/25/2006	22.24	72.032	7.38	0.404				

TABLE 3
GROUNDWATER ANALYTICAL RESULTS SUMMARY (4/06)
APPENDIX I - VOLATILE ORGANIC COMPOUNDS
PHASE I - WHITE STREET LANDFILL
GREENSBORO, NORTH CAROLINA
S&ME PROJECT NO. 1584-98-081

Compound	Sample Locations					PQL	NCAC 2L stds.
	I-1	I-2	I-3	I-4	MW-13		
Chloromethane	ND	ND	ND	ND	ND	10	ns
Vinyl Chloride	ND	ND	ND	ND	ND	10	0.015
Bromomethane	ND	ND	ND	ND	ND	10	ns
Chloroethane	ND	ND	ND	ND	ND	10	2800
Trichlorofluoromethane	ND	ND	ND	ND	ND	5	2100
1,1-Dichloroethene	ND	ND	ND	ND	ND	5	7
Acetone	ND	ND	ND	ND	ND	100	700
Iodomethane	ND	ND	ND	ND	ND	10	ns
Carbon Disulfide	ND	ND	ND	ND	ND	100	700
Methylene Chloride	ND	ND	ND	ND	ND	10	5
Acrylonitrile	ND	ND	ND	ND	ND	200	ns
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	5	70
1,1-Dichloroethane	ND	ND	ND	ND	ND	5	700
Vinyl Acetate	ND	ND	ND	ND	ND	50	ns
cis 1,2-dichloroethene	ND	ND	ND	ND	ND	5	70
2-Butanone	ND	ND	ND	ND	ND	100	170
Bromochloromethane	ND	ND	ND	ND	ND	5	ns
Chloroform	ND	ND	ND	ND	ND	5	0.19
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	5	200
Carbon Tetrachloride	ND	ND	ND	ND	ND	10	0.3
Benzene	ND	ND	ND	ND	ND	5	1
1,2-Dichloroethane	ND	ND	ND	ND	ND	5	0.38
Trichloroethene	ND	ND	ND	ND	ND	5	2.8
1,2-Dichloropropane	ND	ND	ND	ND	ND	5	0.56
Dibromomethane	ND	ND	ND	ND	ND	10	ns
Bromodichloromethane	ND	ND	ND	ND	ND	5	0.6
cis 1,3-dichloropropene	ND	ND	ND	ND	ND	10	0.2
4-Methyl-2-Pentanone	ND	ND	ND	ND	ND	100	ns
Toluene	ND	ND	ND	ND	ND	5	1000
trans 1,3-dichloropropene	ND	ND	ND	ND	ND	10	0.2
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	5	ns
Tetrachloroethene	ND	ND	ND	ND	ND	5	0.7
2-Hexanone	ND	ND	ND	ND	ND	50	ns
Dibromochloromethane	ND	ND	ND	ND	ND	5	ns
1,2-Dibromoethane	ND	ND	ND	ND	ND	5	0.0004
Chlorobenzene	ND	ND	9,6	9,8	ND	5	50
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	5	ns
Ethylbenzene	ND	ND	ND	ND	ND	5	29
m & p, Xylenes	ND	ND	ND	ND	ND	5	530
o-Xylenes	ND	ND	ND	ND	ND	5	530
Styrene	ND	ND	ND	ND	ND	10	100
Bromoform	ND	ND	ND	ND	ND	5	0.19
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	5	ns
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	15	ns
trans 1,4-Dichloro-2-Butene	ND	ND	ND	ND	ND	100	ns
1,4-Dichlorobenzene	ND	ND	ND	5	ND	5	75
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	5	620
1,2-Dibromo-3-Chloropropane	ND	ND	ND	ND	ND	25	0.025

reported concentrations = micrograms per liter (ug/L)

PQL = Methods Practical Quantitation Limits

ND = Analyte not detected

NCAC 2L stds. = 15A North Carolina Administrative Code 2L .0200, GW Quality Standards for Class GA groundwater.

Yellow highlights indicate a measurement higher than the PQL.

Orange highlights indicate a measurement higher than 2L standards.

TABLE 4
GROUNDWATER ANALYTICAL RESULTS SUMMARY (4/06)
8-RCRA METALS
PHASE I - WHITE STREET LANDFILL
GREENSBORO, NORTH CAROLINA
S&ME PROJECT NO. 1584-98-081

Constituent	Sample Locations					PQL	NCAC 2L stds.
	I-1	I-2	I-3	I-4	MW-13		
Arsenic	ND	ND	ND	ND	ND	10	5
Barium	ND	575	ND	744	ND	500	2000
Cadmium	ND	ND	ND	ND	4.3	1	1.75
Chromium	ND	25.7	ND	13.2	ND	10	50
Lead	ND	ND	ND	ND	ND	10	15
Mercury	ND	ND	ND	ND	ND	0.5	1.1
Selenium	ND	ND	ND	ND	ND	20	50
Silver	ND	ND	ND	ND	ND	10	18

all concentrations reported in micrograms per liter (ug/L)

PQL = Methods Practical Quantitation Limits

ND = Analyte not detected

NCAC 2L stds. = 15A North Carolina Administrative Code 2L .0200, Groundwater Quality Standards for Class GA groundwater.

ns = no standard listed according to NCAC 2L

Yellow highlights indicate a measurement higher than the PQL.

Orange highlights indicate a measurement higher than 2L standards.

TABLE 5
SURFACE WATER ANALYTICAL RESULTS SUMMARY (4/06)
APPENDIX I - VOLATILE ORGANIC COMPOUNDS
PHASE I - WHITE STREET LANDFILL
GREENSBORO, NORTH CAROLINA
S&ME PROJECT NO. 1584-98-081

Compound	Sample Locations					15A NCAC 2B	PQL
	SW-1	SW-2	SW-3	SW-4	SW-5	Standards*	
Chloromethane	ND	ND	ND	ND	ND	ns	10
Vinyl Chloride	ND	ND	ND	ND	ND	ns	10
Bromomethane	ND	ND	ND	ND	ND	ns	10
Chloroethane	ND	ND	ND	ND	ND	ns	10
Trichlorofluoromethane	ND	ND	ND	ND	ND	ns	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ns	5
Acetone	ND	ND	ND	ND	ND	ns	100
Iodomethane	ND	ND	ND	ND	ND	ns	10
Carbon Disulfide	ND	ND	ND	ND	ND	ns	100
Methylene Chloride	ND	ND	ND	ND	ND	ns	10
Acrylonitrile	ND	ND	ND	ND	ND	ns	200
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ns	5
1,1-Dichloroethane	ND	ND	ND	ND	ND	ns	5
Vinyl Acetate	ND	ND	ND	ND	ND	ns	50
cis 1,2-dichloroethene	ND	ND	ND	ND	ND	ns	5
2-Butanone	ND	ND	ND	ND	ND	ns	100
Bromochloromethane	ND	ND	ND	ND	ND	ns	5
Chloroform	ND	ND	ND	ND	ND	ns	5
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ns	5
Carbon Tetrachloride	ND	ND	ND	ND	ND	ns	10
Benzene	ND	ND	ND	ND	ND	ns	5
1,2-Dichloroethane	ND	ND	ND	ND	ND	ns	5
Trichloroethene	ND	ND	ND	ND	ND	ns	5
1,2-Dichloropropane	ND	ND	ND	ND	ND	ns	5
Dibromomethane	ND	ND	ND	ND	ND	ns	10

PQL = Methods Practical Quantitation Limits

ND = Parameter not detected

**** = Title 15A NCAC 2B Standards for Class B, C surface water***

ns = Title 15A NCAC 2B provides no established standard for these constituents

Yellow highlights indicate a measurement higher than the PQL.

Orange highlights indicate a measurement higher than 2B standards.

TABLE 5 (Cont.)
SURFACE WATER ANALYTICAL RESULTS SUMMARY (4/06)
APPENDIX I - VOLATILE ORGANIC COMPOUNDS
PHASE I - WHITE STREET LANDFILL
GREENSBORO, NORTH CAROLINA
S&ME PROJECT NO. 1584-98-081

Compound	Sample Locations					15A NCAC 2B	PQL
	SW-1	SW-2	SW-3	SW-4	SW-5	Standards*	
Bromodichloromethane	ND	ND	ND	ND	ND	ns	5
cis 1,3-dichloropropene	ND	ND	ND	ND	ND	ns	10
4-Methyl-2-Pentanone	ND	ND	ND	ND	ND	ns	100
Toluene	ND	ND	ND	ND	ND	11	5
trans 1,3-dichloropropene	ND	ND	ND	ND	ND	ns	10
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ns	5
Tetrachloroethene	ND	ND	ND	ND	ND	ns	5
2-Hexanone	ND	ND	ND	ND	ND	ns	50
Dibromochloromethane	ND	ND	ND	ND	ND	ns	5
1,2-Dibromoethane	ND	ND	ND	ND	ND	ns	5
Chlorobenzene	ND	ND	ND	ND	ND	ns	5
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ns	5
Ethylbenzene	ND	ND	ND	ND	ND	ns	5
m & p, Xylenes	ND	ND	ND	ND	ND	ns	5
o-Xylenes	ND	ND	ND	ND	ND	ns	5
Styrene	ND	ND	ND	ND	ND	ns	10
Bromoform	ND	ND	ND	ND	ND	ns	5
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ns	5
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ns	15
trans 1,4-Dichloro-2-Butene	ND	ND	ND	ND	ND	ns	100
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ns	5
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ns	5
1,2-Dibromo-3-Chloropropane	ND	ND	ND	ND	ND	ns	25

PQL = Methods Practical Quantitation Limits

ND = Parameter not detected

**** = Title 15A NCAC 2B Standards for Class B, C surface water***

ns = Title 15A NCAC 2B provides no established standard for these constituents

Yellow highlights indicate a measurement higher than the PQL.

Orange highlights indicate a measurement higher than 2B standards.

TABLE 6
SURFACE WATER ANALYTICAL RESULTS SUMMARY (4/06)
APPENDIX I - METALS
PHASE I - WHITE STREET LANDFILL
GREENSBORO, NORTH CAROLINA
S&ME PROJECT NO. 1584-98-081

Compound	Sample Locations					15A NCAC 2B Standards*	PQL (µg/l)
	SW-1	SW-2	SW-3	SW-4	SW-5		
Antimony	ND	ND	ND	ND	ND	ns	30
Arsenic	ND	ND	ND	ND	ND	50	10
Barium	ND	ND	ND	ND	ND	ns	500
Beryllium	ND	ND	ND	ND	ND	6.5	2
Cadmium	ND	ND	ND	ND	ND	2	1
Chromium	ND	ND	ND	ND	ND	50	10
Cobalt	ND	ND	ND	ND	ND	ns	10
Copper	ND	ND	ND	ND	ND	ns	200
Lead	ND	ND	ND	ND	ND	25	10
Nickel	ND	ND	ND	ND	ND	88	50
Selenium	ND	ND	ND	ND	ND	5	20
Silver	ND	ND	ND	ND	ND	ns	10
Thallium	ND	ND	ND	ND	ND	ns	10
Vanadium	ND	ND	ND	ND	ND	ns	40
Zinc	ND	ND	51.6	ND	ND	50	50

PQL = Methods Practical Quantitation Limits

ND = Parameter not detected

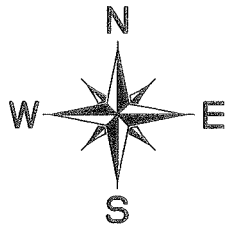
*** = Title 15A NCAC 2B Standards for Class B, C surface water**

ns = Title 15A NCAC 2B provides no established standard for these constituents

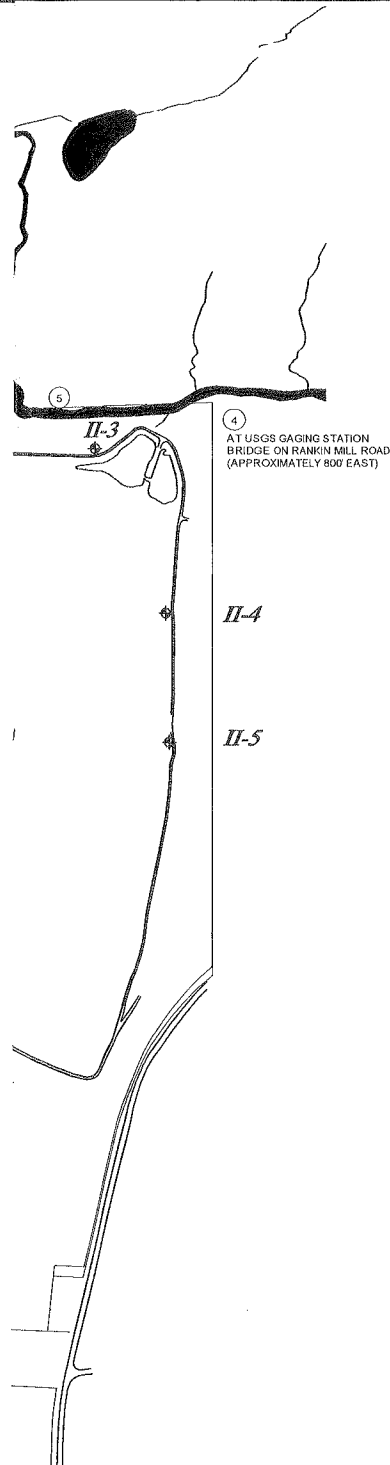
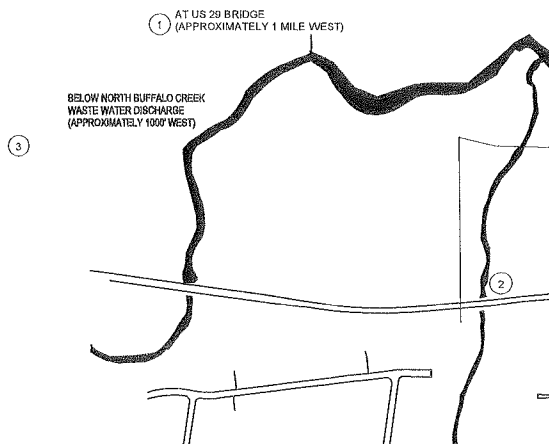
Yellow highlights indicate a measurement higher than the PQL.

Orange highlights indicate a measurement higher than 2B standards.

FIGURES

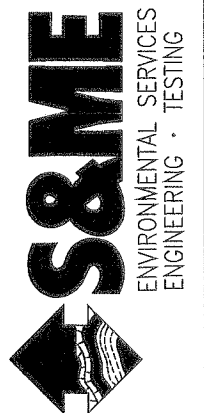


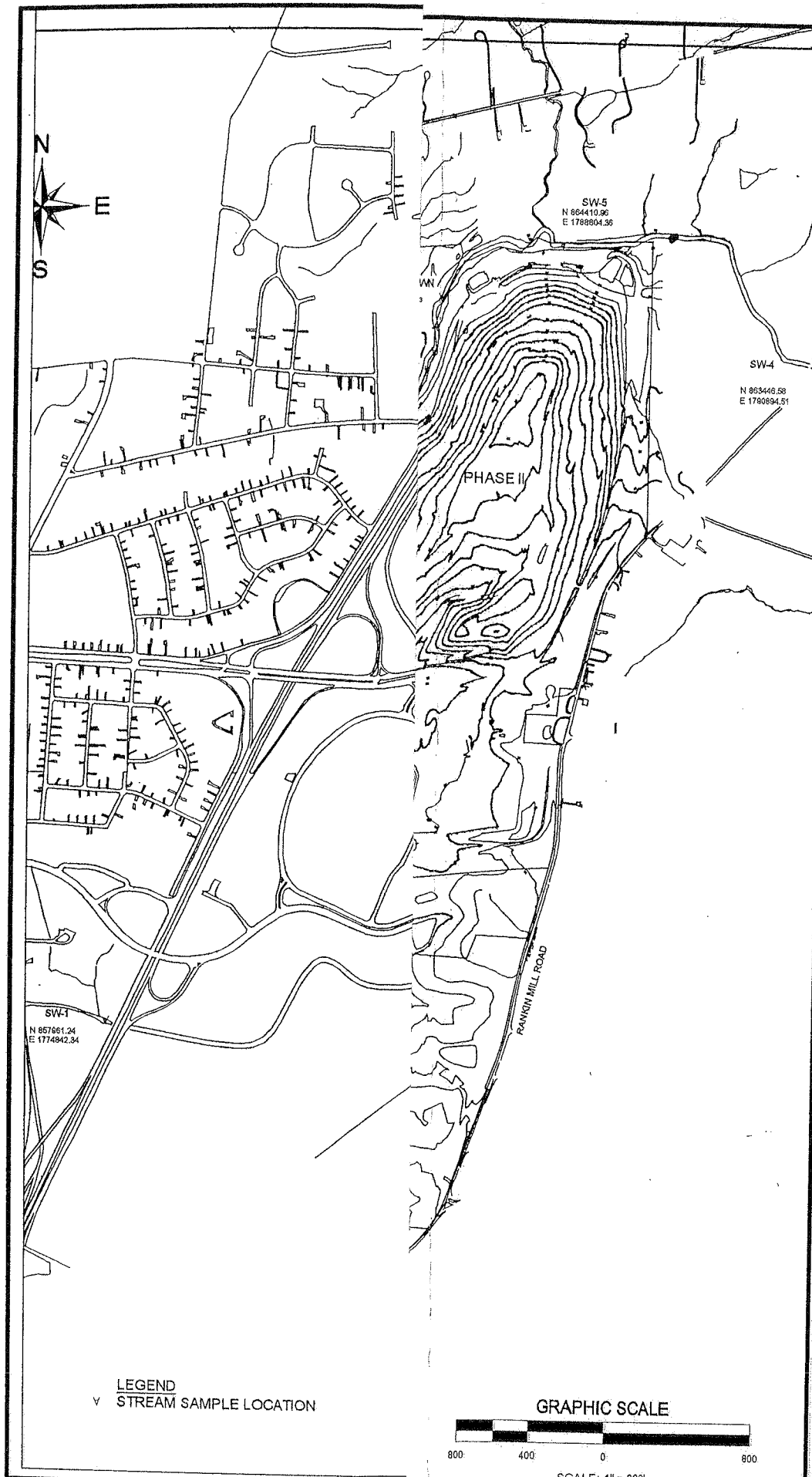
- LEGEND:
- ② SURFACE WATER SAMPLING POINT
 - ◆ MONITORING WELL LOCATION
 - (754.33) GROUNDWATER ELEVATION
 - ← GROUNDWATER FLOW DIRECTION
 - GROUNDWATER CONTOUR LINE



GROUNDWATER FLOW MAP PHASE I WHITE STREET LANDFILL GREENSBORO, NORTH CAROLINA

SCALE: AS SHOWN	DRAWN BY: RDM	CHECKED BY: CW
JOB NO. 1584-98-081	DATE: AUGUST 2006	FIGURE NO. 1



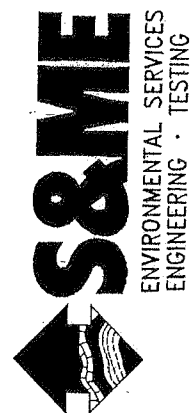


STREAM SAMPLE LOCATION

PHASE I

WHITE STREET LANDFILL
GREENSBORO, NORTH CAROLINA

SCALE: AS SHOWN	DRAWN BY: DSB/RDM	CHECKED BY: DRL
JOB NO. 1584-98-081	DATE: JUNE 2005	FIGURE NO. 2



APPENDIX A
Groundwater Sampling Field Data Sheets

GROUNDWATER SAMPLING FIELD DATA

Location White Street Landfill Purge Date 4/24/06
 Project No. 1584-98-081 Purge Time _____
 Source Well I-1 Sample Date 4/24/06
 Locked? ☒ Yes ☐ No Sample Time 1030
☒ PVC ☐ Steel ☐ Stainless Weather P/Cloudy
 Sampled By GS/MC Air Temp 65°

Water Level and Well Data

Note: Fence locked & labeled

Depth to water from measuring point 8.94 feet
 Depth to well bottom from measuring point _____ feet
 Height of water column _____ feet
 Measuring Point TOL

Well Purging and Sample Collection

Purge Method PUMP
 Sample Method PUMP Start _____ Stop _____
 Purge Rate 100 liter/min Start 0948 Stop 1024
 control settings 6 on 25 off @ 21 PSI cycles _____
 changes? _____ duration _____

Volume of Water in well
 2" well (volume = 0.163 x h) _____
 4" well (volume = 0.651 x h) _____

Volume of water removed _____ gallon liters

Was well purged dry Yes ☒ No

Field Analyses

* Stabilization Parameters

Time	0954	0959	1004	1009	1014	1019	1024	
Temp	16.43	16.05	16.07	16.34	15.82	15.68	15.69	
pH	5.73	5.71	5.70	5.67	5.66	5.66	5.65	
Conductivity	1.97	1.99	1.99	2.01	2.05	2.07	2.08	
ORP*	46	47	48	52	55	56	58	
D.O.*	2.48	1.91	1.45	1.14	.81	.70	.60	
Turbidity*	5.75	5.75	7.12	7.63	7.88	7.80	7.18	

GROUNDWATER SAMPLING FIELD DATA

Location White Street Landfill Purge Date 4/24/06
 Project No. 1584-98-081 Purge Time _____
 Source Well I-2 Sample Date 4/24/06
 Locked? ☒ Yes ☐ No Sample Time 1120
☒ PVC Steel Stainless Weather SUNNY
 Sampled By GS/MC Air Temp 70°

Water Level and Well Data

NOTE: FENCE LOCKED &
LABELED

Depth to water from measuring point 4.66 feet
 Depth to well bottom from measuring point _____ feet
 Height of water column _____ feet
 Measuring Point TOC

Well Purging and Sample Collection

Purge Method PUMP
 Sample Method PUMP Start _____ Stop _____
 Purge Rate 100 liter/min Start _____ Stop _____
 control settings 4 on 20 off e 19 ps cycles _____
 changes? _____ duration _____

Volume of Water in well
 2" well (volume = 0.163 x h) _____
 4" well (volume = 0.651 x h) _____

Volume of water removed _____ gallon liters

Was well purged dry Yes ☒ No

Field Analyses

* Stabilization Parameters

Time	1051	1056	1101	1106	1111	1116		
Temp	18.53	17.67	17.69	17.88	17.88	17.92		
pH	6.17	6.18	6.18	6.19	6.20	6.21		
Conductivity	2.53	2.55	2.55	2.55	2.54	2.54		
ORP*	-90	-114	-120	-128	-129	-129		
D.O.*	.87	.38	.27	.26	.23	.23		
Turbidity*	78	94	231	272	276	250		

GROUNDWATER SAMPLING FIELD DATA

Location White Street Landfill Purge Date 4/24/06
 Project No. 1584-98-081 Purge Time _____
 Source Well I-3 Sample Date 4/24/06
 Locked? ☒ Yes ☐ No Sample Time 1210
☒ PVC ☐ Steel ☐ Stainless Weather P/cloudy
 Sampled By GS/MC Air Temp 70°

Water Level and Well Data

Depth to water from measuring point 13.03 feet
 Depth to well bottom from measuring point _____ feet
 Height of water column _____ feet
 Measuring Point TOC

NOTE: FENCE LOCKED +
 LABELED
 HINGE BROKEN

Well Purging and Sample Collection

Purge Method PUMP
 Sample Method PUMP Start _____ Stop _____
 Purge Rate 100 liter/min Start 1138 Stop 1207
 control settings 40m 20off e 20 PSI cycles _____
 changes? _____ duration _____

Volume of Water in well
 2" well (volume = 0.163 x h) _____
 4" well (volume = 0.651 x h) _____

Volume of water removed _____ gallon liters

Was well purged dry Yes ☒ No

Field Analyses

* Stabilization Parameters

Time	1142	1147	1152	1157	1202	1207		
Temp	16.72	16.92	16.90	17.10	17.24	17.35		
pH	6.49	6.44	6.43	6.41	6.40	6.40		
Conductivity	3.12	3.06	3.03	3.03	3.03	3.01		
ORP*	-95	-95	-92	-92	-91	-89		
D.O.*	1.26	.80	.68	.54	.49	.40		
Turbidity*	36.3	21.6	21.6	36.4	35.4	39		

GROUNDWATER SAMPLING FIELD DATA

Location White Street Landfill Purge Date 4/24/06
 Project No. 1584-98-081 Purge Time _____
 Source Well I-4 Sample Date 4/24/06
 Locked? ☒ Yes ☐ No Sample Time 1305
☒ PVC ☐ Steel ☐ Stainless Weather P/Cloudy
 Sampled By GS/MC Air Temp 70°

Water Level and Well Data

Note: Fence Locked
~~DO NOT OPEN~~
 HINGE BROKEN

Depth to water from measuring point 2.49 feet
 Depth to well bottom from measuring point _____ feet
 Height of water column _____ feet
 Measuring Point TOC

Well Purging and Sample Collection

Purge Method PUMP
 Sample Method PUMP Start _____ Stop _____
 Sample Collection Time
 Purge Rate 100 liter/min Start 1225 Stop 1300
 control settings 1.2 ON 15 OFF & 19 PSI cycles _____
 changes? _____ duration _____

Volume of Water in well
 2" well (volume = 0.163 x h) _____
 4" well (volume = 0.651 x h) _____

Volume of water removed _____ gallon liters

Was well purged dry Yes ☒ No

Field Analyses

* Stabilization Parameters

Time	1230	1235	1240	1245	1250	1255	1300	
Temp	16.07	15.87	15.99	16.17	15.97	15.69	15.53	
pH	6.82	6.85	6.86	6.86	6.87	6.88	6.89	
Conductivity	2.59	2.69	2.87	2.94	2.97	2.99	3.01	
ORP*	-60	-66	-77	-89	-96	-103	-107	
D.O.*	3.24	1.63	1.01	.51	.33	.24	.18	
Turbidity*	200	295	413	461	416	428	398	

GROUNDWATER SAMPLING FIELD DATA

Location White Street Landfill Purge Date 4/25/06
 Project No. 1584-98-081 Purge Time _____
 Source Well MW-13 Sample Date 4/25/06
 Locked? Yes No Sample Time 1630
PVC Steel Stainless Weather cloudy
 Sampled By GS/MC Air Temp 75°

Water Level and Well Data

NOTE: FENCE LOCKED & LABELED

Depth to water from measuring point 21.05 feet
 Depth to well bottom from measuring point _____ feet
 Height of water column _____ feet
 Measuring Point TOC

Well Purging and Sample Collection

Purge Method PUMP
 Sample Method PUMP Start _____ Stop _____
 Purge Rate 100 liter/min Start 1553 Stop 1625
 control settings 4.3 on 25 off e 25 PSI cycles _____
 changes? _____ duration _____

Volume of Water in well
 2" well (volume = 0.163 x h)
 4" well (volume = 0.651 x h)

Volume of water removed 3.2 gallon liters

Was well purged dry Yes No

Field Analyses

* Stabilization Parameters

Time	1600	1605	1610	1615	1620	1625		
Temp	18.16	18.68	18.69	18.56	19.29	19.02		
pH	6.78	6.65	6.61	6.59	6.55	6.54		
Conductivity	.603	.568	.557	.548	.541	.537		
ORP*	116	123	128	132	135	137		
D.O.*	2.73	2.86	3.13	3.38	3.51	3.61		
Turbidity*	2.90	2.06	1.70	1.64	1.83	1.92		

APPENDIX B
Laboratory Analytical Reports